

## Conclusion

We hope that this discussion of the rule and risk assessment process helps you to understand and be more comfortable with EPA's new standard for beneficial use of biosolids. More detailed discussions of the data, assumptions, and models used in the risk assessment process can be found by reading the Technical Support Documents that were issued along with the final rule and EPA's "Guide to the Biosolids Risk Assessment Methodology for the EPA 503 Rule," EPA/832-B-93-005, which should be completed by the end of 1994.

Additional understanding can be gained from the preamble to the rule and the papers written by the experts who have assisted EPA in selecting appropriate data, assumptions, and models. The rule itself is described in greater detail in EPA's "Plain English Guide to the EPA 503 Biosolids Rule," EPA/832-R-93-003. To help address remaining concerns, EPA has sponsored and will continue to sponsor and foster research and information sharing events, as well as provide technical assistance and written publications.



Strip-mined land in Pennsylvania reclaimed with the use of biosolids.

## Sources of Information

### EPA Materials Available From:

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C/O West Virginia University  
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## EPA Materials

*A Plain English Guide to the EPA 503 Biosolids Rule.* USEPA Office of Wastewater Enforcement and Compliance. EPA/832-R-93-003. June 1994. To be available in 1994 from OWRC.

*POTW Sludge Sampling and Analysis Guidance Document.* USEPA Office of Wastewater Enforcement and Compliance (1st Edition, August 1989. Available from NTIS [PB93-227957] and ERIC [W134]. Revised 2nd Edition Expected in 1994.

*Environmental Regulations and Technology: Control of Pathogens and Vector Attraction in Sewage Sludge.* USEPA Office of Research and Development. EPA/625/R-92/013. December 1992. Available from CERI.

*Domestic Septage Regulatory Guidance: A Guide to the EPA 503 Rule.* USEPA Office of Wastewater Enforcement and Compliance. EPA/832-B-92-005. July 1993. Available from OWRC, NTIS [PB94-142155], and ERIC [W285].

*A Guide to the Biosolids Risk Assessment Methodology for the EPA 503 Rule.* USEPA Office of Wastewater Enforcement and Compliance. EPA/832-B-93-005. To be available late in 1994 from OWRC.

*Technical Support Document for Land Application of Sewage Sludge, Volumes 1 and 2.* USEPA Office of Water. Available from NTIS [PB93-110575 and PB93-110583] and ERIC [D734 and D735].

*Technical Support Document for Surface Disposal of Sewage Sludge.* USEPA Office of Water. Available from NTIS [PB93-110591] and ERIC [D757].

*Technical Support Document for Incineration of Sewage Sludge.* USEPA Office of Water. Available from NTIS [PB93-110617] and ERIC [D756].

*Technical Support Document for Reduction of Pathogens and Vector Attraction in Sewage Sludge.* USEPA Office of Water. Available from NTIS [PB93-110609] and ERIC [D755].

*Guidance for Writing Case-by-Case Permit Requirements for Municipal Sewage Sludge.* USEPA Office of Wastewater Enforcement and Compliance. May 1990. Available from NTIS [PB91-145508] and ERIC [W126].

*Guidance for Writing Permits for the Use or Disposal of Sewage Sludge.* Draft. USEPA Office of Wastewater Enforcement and Compliance. Available from ERIC [W114]. Final available from OWRC late in 1994.

*Preparing Sewage Sludge for Land Application or Surface Disposal: A Guide for Preparers of Sewage Sludge on the Monitoring, Record Keeping, and Reporting Requirements of the Federal Standards for the Use of Sewage Sludge, 40 CFR Part 503.* USEPA Office of Wastewater Enforcement and Compliance. EPA/831-B-93-002a. September 1993. Available from NTIS [PB94-102415], ERIC [W267], and OWRC.

*Sewage Sludge Sampling Video.* USEPA Office of Wastewater Enforcement and Compliance. 1993. Available from OWRC or Regional EPA Sewage Sludge Coordinators.

*Land Application of Sewage Sludge: A Guide for Land Appliers on the Record Keeping and Reporting Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge, 40 CFR Part 503.* USEPA Office of Wastewater Enforcement and Compliance. EPA/831-B-93-002b. May 1994. Available from NTIS, ERIC, and OWRC.

*Surface Disposal of Sewage Sludge: A Guide for Owners/Operators of Surface Disposal Facilities on the Monitoring, Record Keeping, and Reporting Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge, 40 CFR Part 503.* USEPA Office of Wastewater Enforcement and Compliance. EPA/831-B-93-002c. May 1994. Available from NTIS, ERIC, and OWRC.

## Other Literature

Ryan, J. A., and R. L. Chaney.  
1992. *Regulation of Municipal Sewage Sludge Under the Clean Water Act Section 503: A Model for Exposure and Risk Assessment for MSW-Compost*. In Science and Engineering of Composting, Hoitink and Keener, ed. Renaissance Publications, Worthington, OH. 1993.

Chaney, R. L. and J. A. Ryan.  
1992. *Heavy Metals and Toxic Organic Pollutants in MSW-Composts: Research Results on Phytoavailability, Bioavailability, Fate, Etc.* Ibid.

Chaney, R.L. and J.A. Ryan.  
1994. *State of the Art in Evaluating the Risks of As, Cd, and Pb in Urban Soils for Plants, Animals, and Humans*. Proc. Conf. Criteria for Decision Finding in Soil Protection: Evaluation of Arsenic, Lead, and Cadmium in Contaminated Urban Soils (Oct. 9-11, 1991; Braunschweig, FRG). In Press.

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